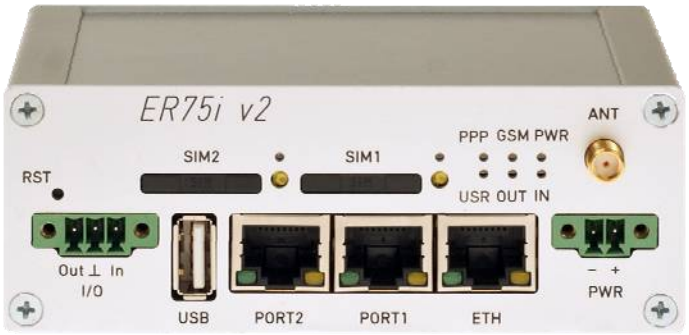
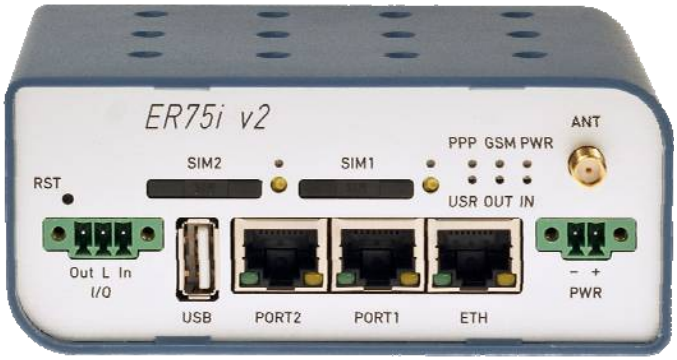
EDGE router ER75i v2 and ER75i v2 SL

USER'S GUIDE





Used symbols

Danger – important notice, which may have an influence on the user's safety or the function of the device.

Attention – notice on possible problems, which can arise in specific cases.

Information, notice – information, which contains useful advice or special interest.

GPL license

Source codes under GPL license are available free of charge by sending an email to info@vitriko.com

Declared quality system
ISO 9001

Contents

1. Safety instruction 1
2. Product disposal instructions 2
3. Router description 3
4. Contents of package 4
5. Router design 5
5.1. Version 5
5.2. Delivery identification 5
5.3. Ordering code 6
5.3.1. Basic version 6
5.3.2. Full version 6
5.4. Basic dimensions plastic box 7
5.5. Basic dimensions aluminum box 7
5.6. Mechanical external dimensions and mounting recommendations 8
5.7. User interfaces (connectors) 10
5.7.1. Status indication 11
5.7.2. Power connector PWR 12
5.7.3. Antenna connector ANT 13
5.7.4. SIM card reader 14
5.7.5. Ethernet port 14
5.7.6. PORT1 16
5.7.7. PORT2 16
5.7.8. USB port 17
5.7.9. I/O port 18
5.7.10. Reset 19
6. First use 20
6.1. Connecting the router before first use 20
6.2. Start router 21
6.3. Router configuration 21
6.3.1. Configuration over web browser 21
6.3.2. Configuration over Telnet 21
7. Technical parameters 22
7.1. Technical parameters of router 22
7.2. Technical parameters of module 22
7.3. Technical parameters of processor 23
7.4. Technical parameters of I/O port 23
7.5. Technical parameters of expansion port 23
8. Recommended literature 24
9. Possible problems 24
10. FAQ 25
11. Customers support 27

Image list

Fig. 1: Contents of package 4
Fig. 2: Front panel ER75i v2B 5
Fig. 3: Front panel ER75i v2B SL 5
Fig. 4: Front panel ER75i v2F SL 5
Fig. 5: Front panel ER75i v2F SL 5
Fig. 6: Label ER75i v2B 5
Fig. 7: Label ER75i v2F 5
Fig. 8 Basic dimensions plastic box 7
Fig. 9: Basic dimensions aluminum box 7
Fig. 10: Space around the antenna 8
Fig. 11: Space around antenna for SL version 8
Fig. 12: Cable routing 9
Fig. 13: Cable routing for SL version 9
Fig. 14: Space in front connectors 9
Fig. 15: Space in front connectors SL version 9
Fig. 16: Front panel ER75i v2F 10
Fig. 17: Front panel ER75i v2F SL 10
Fig. 18: Power connector 12
Fig. 19: Connection of power supply connector 12
Fig. 20: Connection of power supply 12
Fig. 21: External antenna 13
Fig. 22: Connecting the antenna 13
Fig. 23: Ejected the SIM card 14
Fig. 24: Ethernet connector 14
Fig. 25: Connection Ethernet cable 15
Fig. 26: Example of router connection 15
Fig. 27: Connection PORT1 cable 16
Fig. 28: Connection PORT2 cable 16
Fig. 29: USB connector 17
Fig. 30: Connection PLC to the router 17
Fig. 31: Connection flash memory to the router 17
Fig. 32: I/O connector 18
Fig. 33: Connection I/O cable 18
Fig. 34: Connection input and output of router 18
Fig. 35: Router reset 19
Fig. 36: Router connection 20

Table list

Table 1: Expansion port possibilities 4
Table 2: Router version 5
Table 3: Delivery identification 5
Table 4: Ordering code of basic version 6
Table 5: Ordering code of full version 6
Table 6: Front panel description 10
Table 7: Router status indication 11
Table 8: Connection of power connector 12
Table 9: Connection of Ethernet connector 14
Table 10: Connection of USB connector 17
Table 11: Connection of I/O port 18
Table 12: Description of reset and restart router 19
Table 13: Technical parameters of router 22
Table 14: Technical parameters of module 22
Table 15: Technical parameters of processor 23
Table 16: Technical parameters of I/O 23

1. Safety instruction

Please, observe the following instructions:

- The router must be used in compliance with all applicable international and national laws and in compliance with any special restrictions regulating the utilization of the router in prescribed applications and environments.
- To prevent possible injury to health and damage to appliances and to ensure that all the relevant provisions have been complied with, use only the original accessories. Unauthorised modifications or utilization of accessories that have not been approved may result in damage to the router and in a breach of applicable regulations. Unauthorized modifications or utilization of accessories that have not been approved may result in the termination of the validity of the guarantee.
- The router can not be opened.
- **Caution!** The SIM card could be swallowed by small children.
- Voltage at the feed connector of the router must not be exceeded.
- Do not expose the router to extreme ambient conditions. Protect the router against dust, moisture and high temperature.
- The router should not be used at petrol stations. We remind the users of the duty to observe the restrictions concerning the utilization of radio devices at petrol stations, in chemical plants, or in the course of blasting works in which explosives are used.
- Switch off the router when travelling by plane. Utilization of the router in a plane may endanger the operation of the plane or interfere with the mobile telephone network, and may be unlawful. Failure to observe these instructions may result in the suspension or cancellation of telephone services for the respective client, or, it may result in legal sanctions; it may also result in both eventualities.
- When using the router in the close proximity of personal medical devices, such as cardiac pacemakers or hearing aids, you must proceed with heightened caution.
- If it is in the proximity of TV sets, radio receivers and personal computers, the telephone may cause interference.
- It is recommended that you should create an appropriate copy or backup of all the important settings that are stored in the memory of the device.

2. Product disposal instructions

The WEEE (Waste Electrical and Electronic Equipment: 2002/96/EC) directive has been introduced to ensure that electrical/electronic products are recycled using the best available recovery techniques to minimize the impact on the environment. This product contains high quality materials and components which can be recycled. At the end of it's life this product MUST NOT be mixed with other commercial waste for disposal. Check the terms and conditions of your supplier for disposal information.

3. Router description

GPRS/EDGE ER75i v2 router is used to wirelessly connect various equipments and devices via Ethernet interface 10/100 to the Internet or intranet. Thanks to high security level and wide coverage of GPRS/EDGE technology provided by mobile phone operators, it is mostly used in industrial applications, for remote maintenance and service of machines, or for data transfer from solar or wind power plants. Other benefits and advantages includes high modularity – the router offers option to connect various user devices via Ethernet 10/100, RS232, RS485, RS422, MBUS or I/O**.**

As a standard, this industrial ER75i v2 wireless router is equipped with one Ethernet 10/100, one USB Host port, one binary input/output (I/O) port and one SIM card. To save and backup communication data a version with 2 SIM cards is available. The wide range of interface options of this wireless router further expands an optional Port1 and Port2 - selected by the customer – for example Ethernet port 10/100, serial interface ports RS232/RS485/RS422/MBUS or (I/O - CNT). Port2 may be equipped with serial interfaces RS232/RS485/RS422/MBUS or (I/O - CNT). The wireless router is supplied either in a plastic or metal casing, based on the requirements of the customer.

Configuration is done via web interface protected by password. The GPRS/EDGE router supports creation of VPN tunnels using technologies IPsec, OpenVPN and L2TP to ensure safe communication. Web interface provides detail statistics about the wireless router activities, signal strength, detailed log, etc. Router supports functions: DHCP, NAT, NAT-T, DynDNS, NTP, VRRP, control by SMS and many other functions.

Other diagnostic functions ensuring continuous communication include automatic inspection of PPP connection offering an automatic restart feature - in case of connection losses, or hardware watchdog which monitors the status of the router. With the help of a special window (start up script window) you may insert Linux scripts for various actions. For some applications the key option to create several different configurations for one wireless GPRS/EDGE router, the so-called profiles (maximum of 4), and the option to switch between them (for example via SMS, binary input status, etc.) is essential. Cellular wireless routers may automatically upgrade configuration and firmware from server. This allows mass reconfiguration of many routers in one time.

For easy use additional software may be used - communication VPN server Digicluster and software for router monitoring R-SeeNet.

Examples of possible applications

- mobile office
- fleet management
- security system
- telematic
- telemetric
- remote monitoring
- vending and dispatcher machines

4. Contents of package

Basic delivered set of router includes:

- router,
- power supply,
- crossover UTP cable,
- external antenna,
- clips for the DIN rail,
- installation CD containing instructions,
- paper start guide.

Fig. 1: Contents of package

The router box and DIN mount are supplied in a metal case in the SL version of the router.

In addition to the basics it is possible to deliver:

- one or two expansion ports RS232, RS485/RS422, ETHERNET, M-BUS or CNT. Separation columns for mounting expansion boards are included.

Module can be connected only as follows.	
PORT1	RS232, RS485/422, ETHERNET, M-BUS, CNT
PORT2	RS232, RS485/422, M-BUS

Table 1: Expansion port possibilities

5. Router design

5.1. *Version*

	Box	SIM1	SIM2	I/O	USB	PORT1	PORT2	ETH
ER75i v2B set	Plastic	✓		✓	✓	✓		✓
ER75i v2B SL set	Metal	✓		✓	✓	✓		✓
ER75i v2F set	Plastic	✓	✓	✓	✓	✓	✓	✓
ER75i v2F SL set	Metal	✓	✓	✓	✓	✓	✓	✓

Table 2: Router version

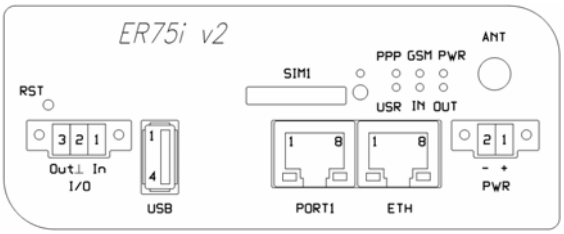


Fig. 2: Front panel ER75i v2B

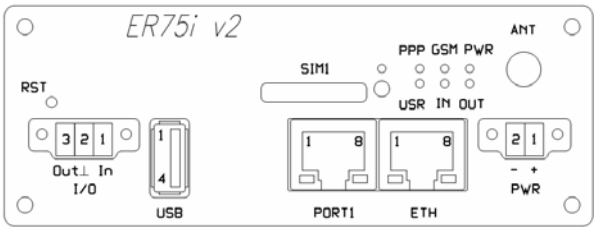


Fig. 3: Front panel ER75i v2B SL

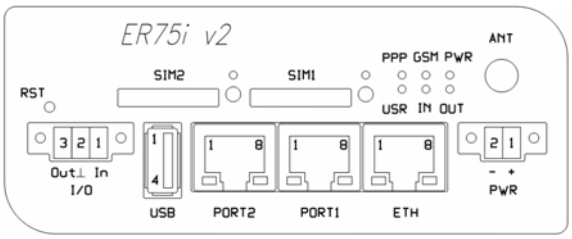


Fig. 4: Front panel ER75i v2F SL

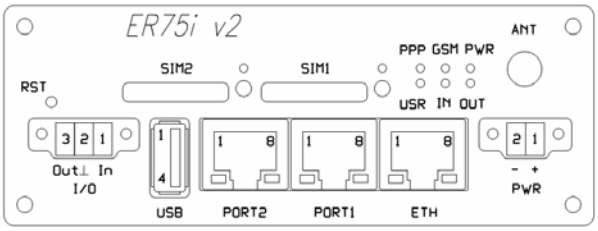


Fig. 5: Front panel ER75i v2F SL

5.2. *Delivery identification*

Trade name	Type name	Other
ER75i v2B	ER-75i-v2	Basic version
ER75i v2B SL	ER-75i-v2	Basic version in the metal box
ER75i v2F	ER-75i-v2	Full version
ER75i v2F SL	ER-75i-v2	Full version in the metal box

Table 3: Delivery identification

Fig. 6: Label ER75i v2B

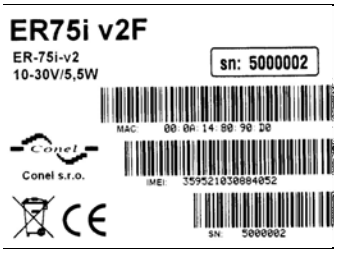


Fig. 7: Label ER75i v2F

5.3. *Ordering code*

5.3.1. Basic version

Optional port	Ordering code
Version without optional port	ER75i v2B set
Version with optional Ethernet port	ER75i v2B ETH set
Version with optional RS232 port	ER75i v2B RS232 set
Version with optional RS485 port	ER75i v2B RS458 set
Version with optional MBUS port	ER75i v2B MBUS set
Version with optional CNT port	ER75i v2B CNT set

Table 4: Ordering code of basic version

5.3.2. Full version

Optional port	Possible participation	Ordering code
Version without optional port		ER75i v2F set
Version with optional Ethernet port	PORT1	ER75i v2F ETH set
Version with optional RS232 port	PORT1 a PORT2	ER75i v2F RS232 set
Version with optional RS485 port	PORT1 a PORT2	ER75i v2F RS458 set
Version with optional MBUS port	PORT1 a PORT2	ER75i v2F MBUS set
Version with optional CNT port	PORT1	ER75i v2F CNT set

Table 5: Ordering code of full version

Second optional port is written after first optional port in the ordering code.

Example:

- Full version with Ethernet and RS232 port: **ER75i v2F ETH RS232 set**.
- Full version with Ethernet and RS232 port in metal box:
  ER75i v2F SL ETH RS232 set.

5.4. *Basic dimensions plastic box*

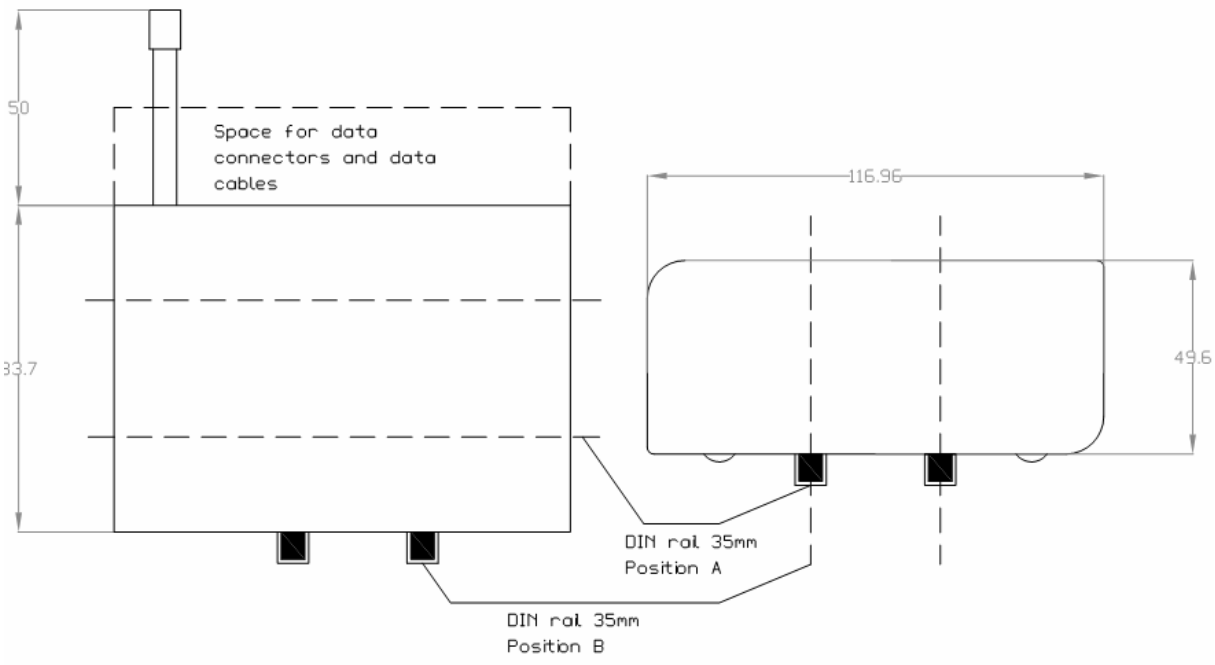


Fig. 8 Basic dimensions plastic box

5.5. *Basic dimensions aluminum box*

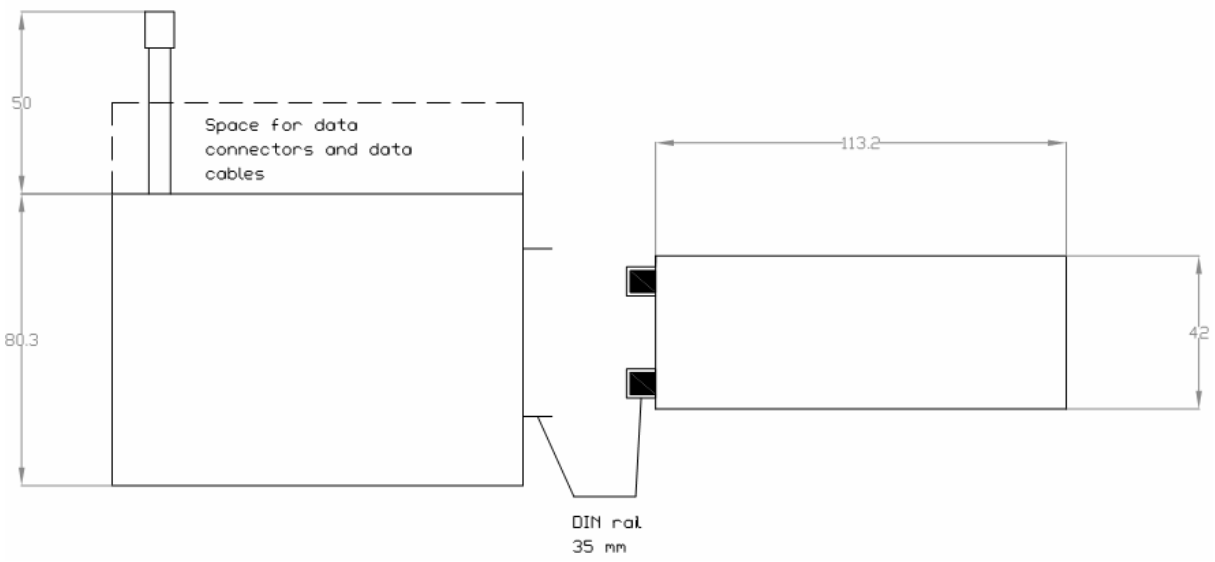


Fig. 9: Basic dimensions metal box

5.6. *Mechanical external dimensions and mounting recommendations*

Mounting recommendations:

- possibility to be put on a work surface,
- DIN rail with clips CPD2 (Elpac clip SL for SL version) are included.

For the most of applications with a built-in router in a switch board it is possible to recognize two kinds of environments:

- no public and industry environment of low voltage with high interference,
- public environment of low voltage without high interference.

For both of these environments it is possible to mount router to a switch board, the following there is no need to have examination immunity or issues in connection with EMC according to EN 60439-1 ed.2:00 + A1:04.

For compliance of EN 60439-1 ed.2:00 + A1:04 specification it is necessary to observe next assembly of the router to the switch - board:

- for whip antennas we recommend to observe a distance of 6 cm from cables and metal surfaces on every side according to the next picture due to the elimination of interference, while using an external antenna except for the switch-board it is necessary to fit a lightening conductor,
- before mounting a router on sheet-steel we recommend using an external antenna,

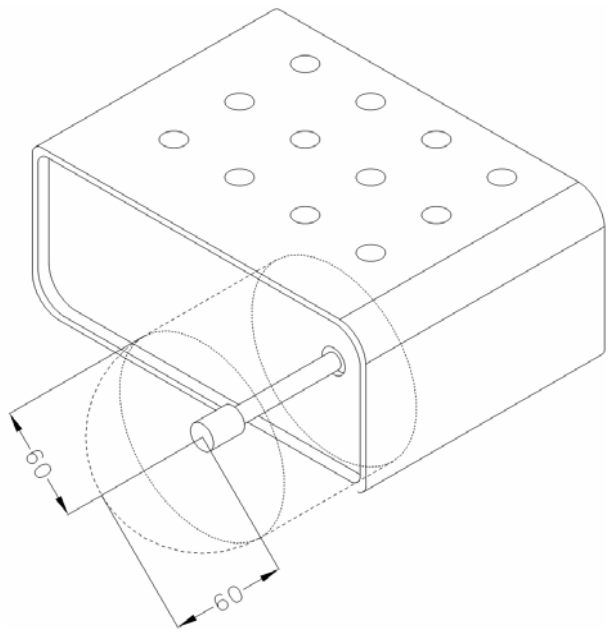


Fig. 10: Space around the antenna

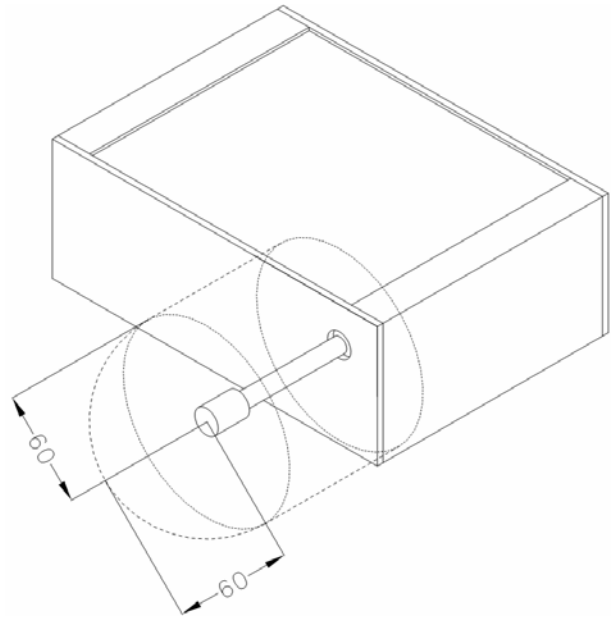


Fig. 11: Space around antenna for SL version

- for every cables we recommend to bind the bunch according to the following picture, we recommend for this use:
  - length of the bunch (combination of power supply and data cables) can be maximum 1,5 m, if the length of data cables exceeds 1,5 m or in the event of, the cable leads towards the switch - board, we recommend installing over - voltage protectors (surge suppressors),
  - with data cables they mustn't carry cables with reticular tension ~ 230 V/50 Hz,
  - all signals to sensors must be twisted pairs

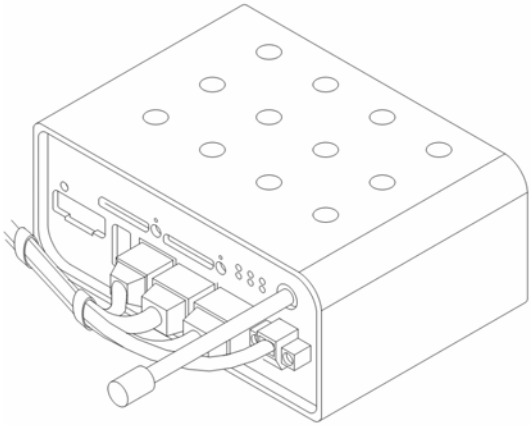


Fig. 12: Cable routing

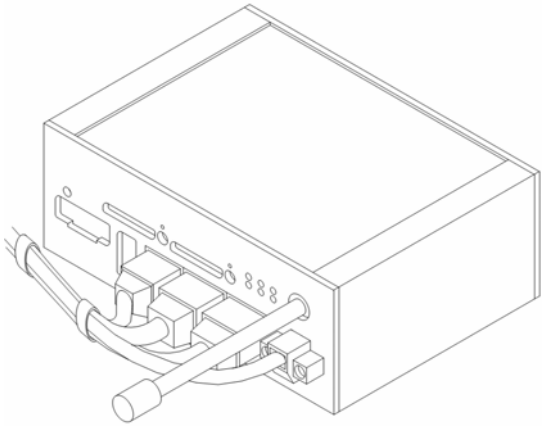


Fig. 13: Cable routing for SL version

- sufficient space must be left before individual connectors for handling of cables

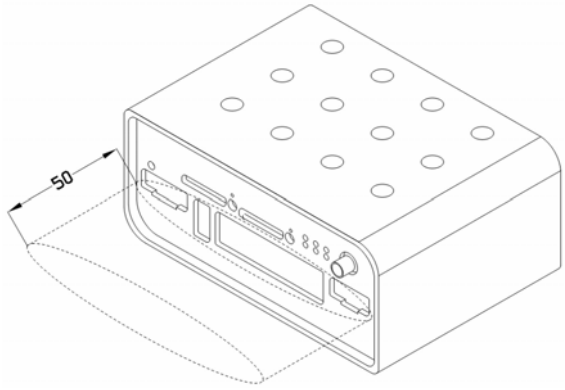


Fig. 14: Space in front connectors

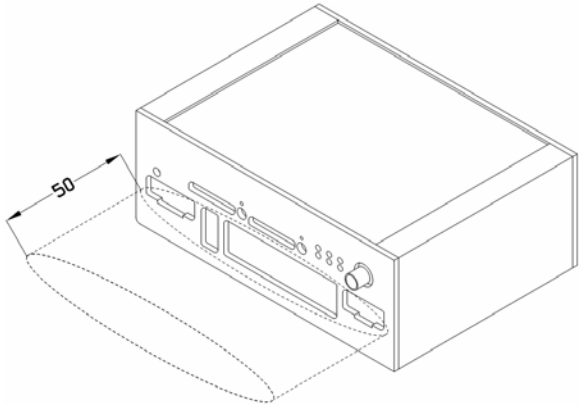


Fig. 15: Space in front connectors SL version

- for correct function of the router we recommend to use in the switch-board earth-bonding distribution frame for grounding of power supply of router, data cables and antenna,

5.7. *User interfaces (connectors)*

On the front panel is located:

Label	Connector	Description
PWR	2-pin	Connector for connection the power supply adapter.
ETH	RJ45	Connector for connection into the local computer network.
PORT1	RJ45	Connector for connection equipment over RS232, RS458/422, ETHERNET, M-BUS or CNT.
PORT2	RJ45	Connector for connection equipment over RS232, RS485/422 or M-BUS (only FULL version).
ANT	SMA	Connector for connection main antenna.
USB	USB-A Host	Connector– for connection the devices with the router, USB supports equipments with PL-2303 and FTDI USB/RS232 converter.
I/O	3-pin	Connector for connection of the binary input and output.
SIM1	-	Holder for first SIM card.
SIM2	-	Holder for second SIM card (only FULL version).

Table 6: Front panel description

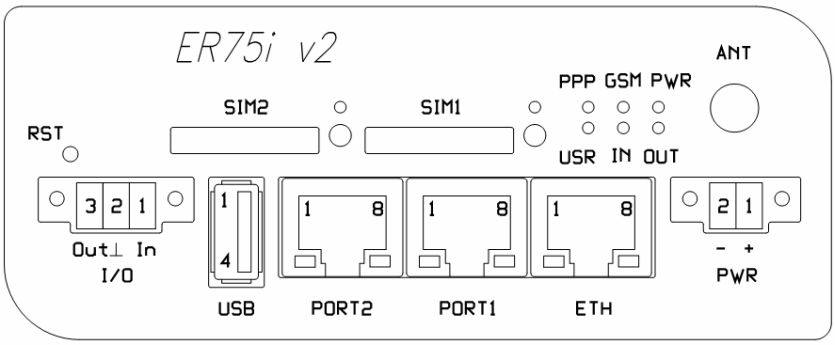


Fig. 16: Front panel ER75i v2F

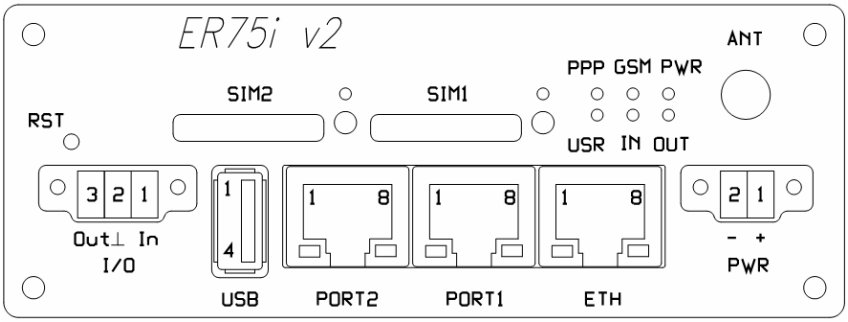


Fig. 17: Front panel ER75i v2F SL

5.7.1. Status indication

About router status inform eight led indicators on the front panel and on every port are two LED indicators, which inform about port status.

Label	Color	State	Description
PWR	Green	Blinking On	Router is ready Starting of the router
GSM	Red	Blinking	Communication in progress
PPP	Yellow	1 x flash per second 2 x flash per second 3x flash per second	Signal strength is from –50 dBm to –69 dBm Signal strength is from –70 dBm to –89 dBm or difference between neighbours cells is exactly 3 dBm Signal strength is from –90 dBm to –113 dBm or difference between neighbours cells is smaller than 3 dBm
USR	Yellow	Function selected by user	
OUT	Green	On	Binary output active
IN	Green	On	Binary input active
ETH	Green	On Off	Selected 100 Mbit/s Selected 10 Mbit/s
ETH	Yellow	On Blinking Off	The network cable is connected Data transmission The network cable is not connected
PORT	Green	Description by port (viz. Technical specification of expansion port)	
PORT	Yellow	Description by port (viz. Technical specification of expansion port)	
SIM1	Yellow	On	SIM card 1 is active
SIM2	Yellow	On	SIM card 2 is active

Table 7: Router status indication

State indicate of PPP LED is updated every 10 seconds.

5.7.2. Power connector PWR

Panel socket 2-pin.

Pin number	Signal mark	Description
1	VCC (+)	Positive pole of DC supply voltage (+10 to +30 VDC)
2	GND (-)	Negative pole of DC supply voltage

Table 8: Connection of power connector

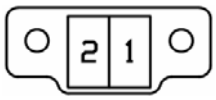


Fig. 18: Power connector

Power supply for router is required between +10 V to +30 V DC supply. Protection against reversed polarity without signaling is built into the router.

The power consumption during receiving is 1W. The peak power consumption during data sending is 5,5W. For correct operation it is necessary that the power source is able to supply a peak current of 600mA.

Connector on the power cable connects into the power connector on the router head and tightens locking screws. (See bellow picture)

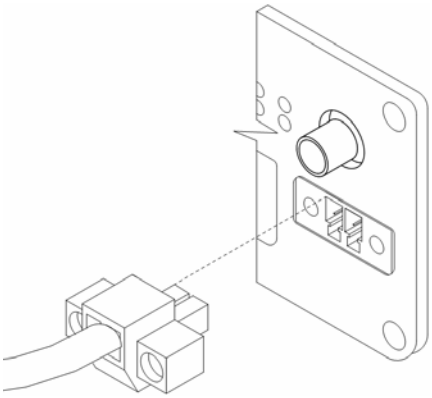


Fig. 19: Connection of power supply connector

Circuit example:

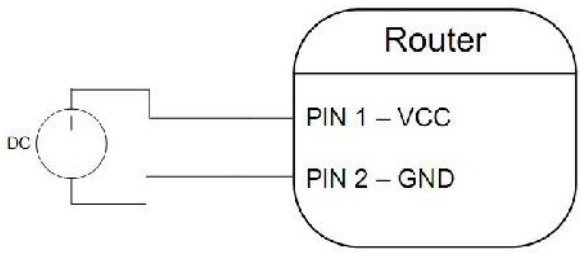


Fig. 20: Connection of power supply

The positive pole VCC is marked by a red socket on the power.

5.7.3. Antenna connector ANT

The antenna is connected to the router using the SMA connector on the front panel.

The router can not operate without the antenna connected labeled as ANT.

Example of antenna:

Fig. 21: External antenna

The antenna with the SMA connector. The antenna is connected to screw the antenna connector SMA to SMA connector on the router head. (See figure below).

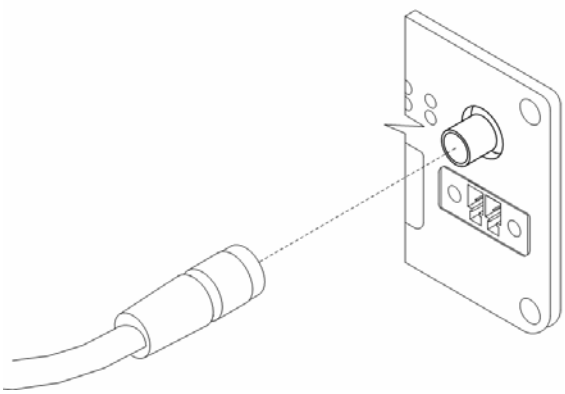


Fig. 22: Connecting the antenna

5.7.4. SIM card reader

The SIM card reader for 3 V and 1.8 V SIM cards is located on the front panel of the router. To initiate the router into operation it is necessary to insert an activated SIM card with unblocked PIN in the reader. The SIM cards might be of different adjusted APN (Access Point Name).

Changing the SIM card:

Press the small yellow button to eject the reader holder. Insert the SIM card into the reader holder and slide it in the reader. (See bellow picture)

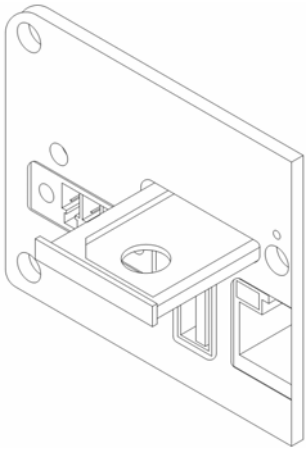


Fig. 23: Ejected the SIM card

5.7.5. Ethernet port

Panel socket RJ45.

Pin number	Signal mark	Description	Data flow direction
1	TXD+	Transmit Data – positive pole	Input/Output
2	TXD-	Transmit Data – negative pole	Input/Output
3	RXD+	Receive Data – positive pole	Input/Output
4	---	---	
5	---	---	
6	RXD-	Receive Data – negative pole	Input/Output
7	---	---	
8	---	---	

Table 9: Connection of Ethernet connector

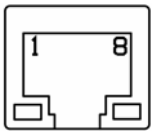


Fig. 24: Ethernet connector

ATTENTION! Port ETH is not POE (Power Over Ethernet) compatible!

Ethernet cable plug into the RJ45 connector labeled as ETH. (See bellow picture)

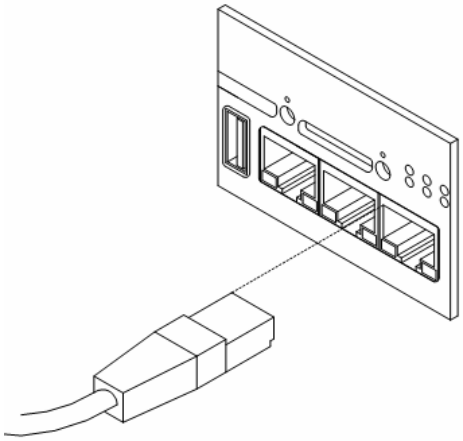


Fig. 25: Connection Ethernet cable

The ETH router connection:

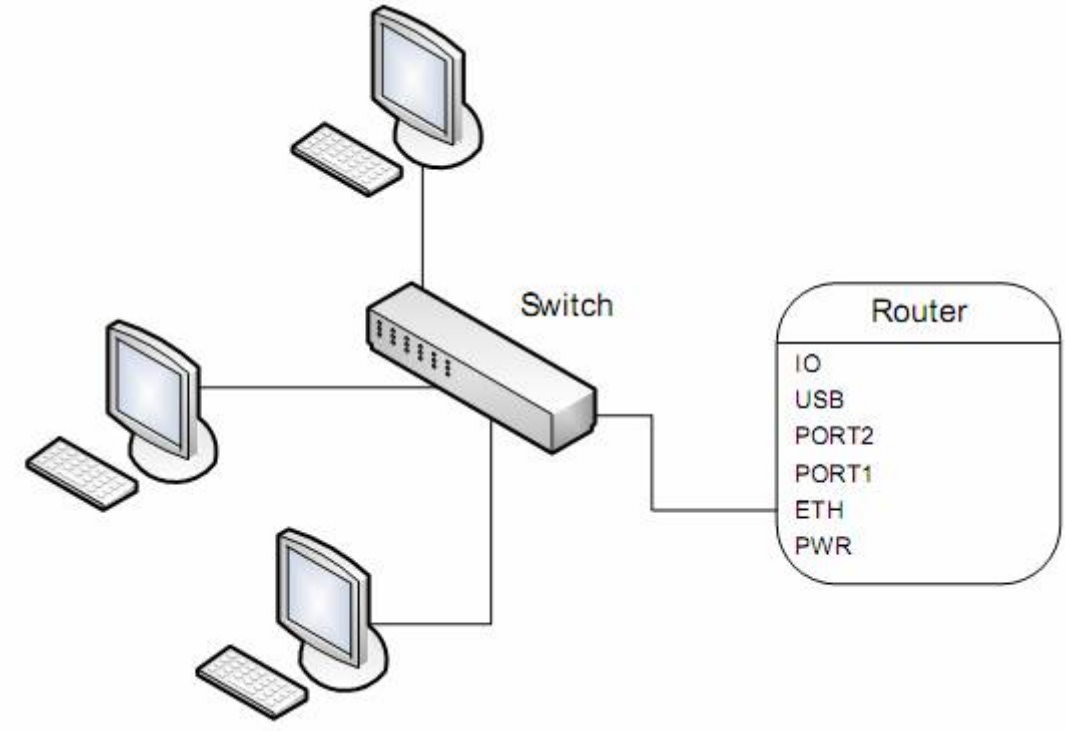


Fig. 26: Example of router connection

5.7.6. PORT1

The PORT1 is equipped with one of the offered options ports. For PORT1 are available on the interface.

PORT1	RS232, RS485/422, ETHERNET, M-BUS, CNT

Description, connection and examples of optional connection ports can be found in separate manuals expansion ports.

PORT1 cable plug into the RJ45 connector labeled as ETH. (See bellow picture)

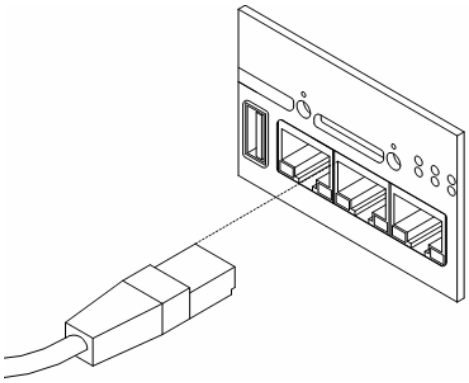


Fig. 27: Connection PORT1 cable

5.7.7. PORT2

The PORT2 is equipped with one of the offered options ports. For PORT2 are available on the interface.

PORT2	RS232, RS485/422, M-BUS,

PORT2 is fitted only in the FULL version of the router

Description, connection and examples of optional connection ports can be found in separate manuals expansion ports.

PORT2 cable plug into the RJ45 connector labeled as ETH. (See bellow picture)

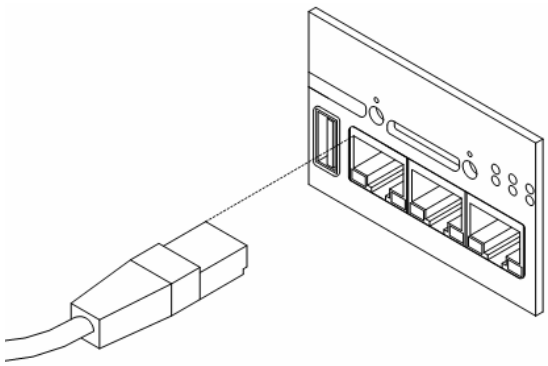


Fig. 28: Connection PORT2 cable

5.7.8. USB port

Panel socket USB-A.

Pin number	Signal mark	Description	Data flow direction
1	+5V	Positive pole of 5V DC supply voltage	
2	USB data -	USB data signal – negative pole	Input/Output
3	USB data +	USB data signal – positive pole	Input/Output
4	GND	Negative pole of DC supply voltage	

Table 10: Connection of USB connector

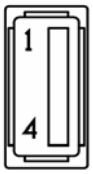


Fig. 29: USB connector

Example of connecting devices with serial interface to the USB router:

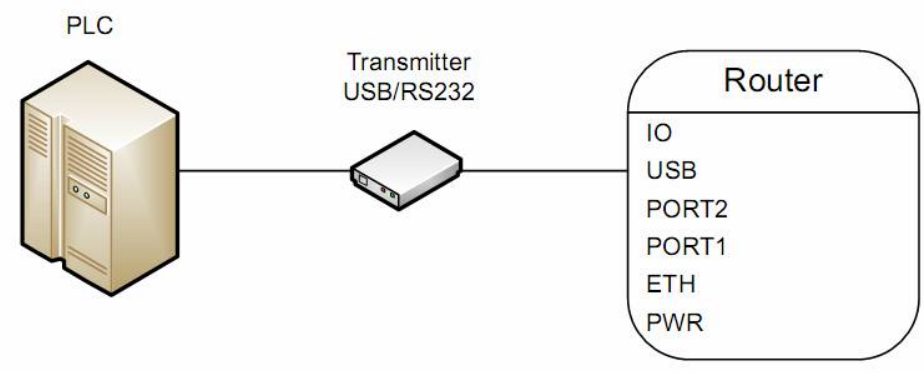


Fig. 30: Connection PLC to the router

Example of connecting of USB flash disk to the USB router:

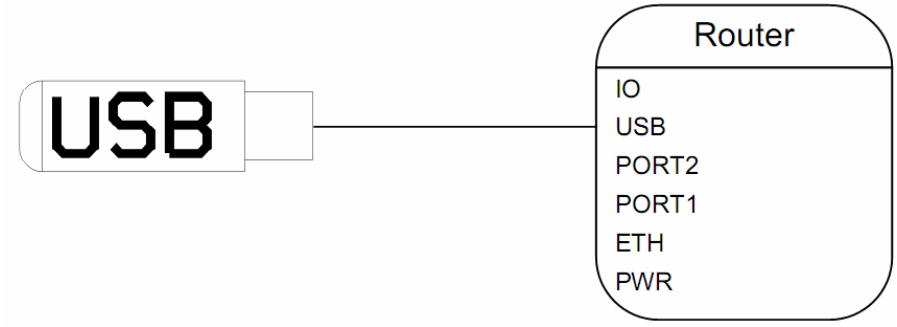


Fig. 31: Connection flash memory to the router

5.7.9. I/O port

Panel socket 3pin.

Pin no.	Signal mark	Description	Data flow direction
1	BIN0	Binary input	Input
2	GND	Signal ground	
3	OUT0	Binary output	Output

Table 11: Connection of I/O port

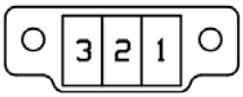


Fig. 32: I/O connector

The user interface I/O is for processing of binary input signal and to control (settings) of binary output signal. Binary output is not switched to ground, by default configuration.

Maximum load binary output is 30V / 100mA. The constant current supplied by the binary input is 3 mA.

Connector I/O cable connect into the I/O connector on the router head and tighten locking screws. (See bellow picture)

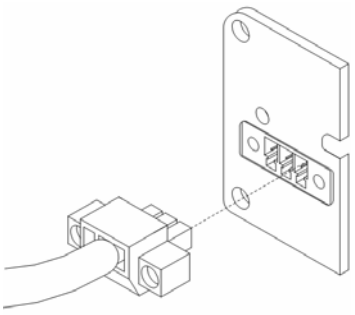


Fig. 33: Connection I/O cable

Circuit example of a binary input or output equipment with router:

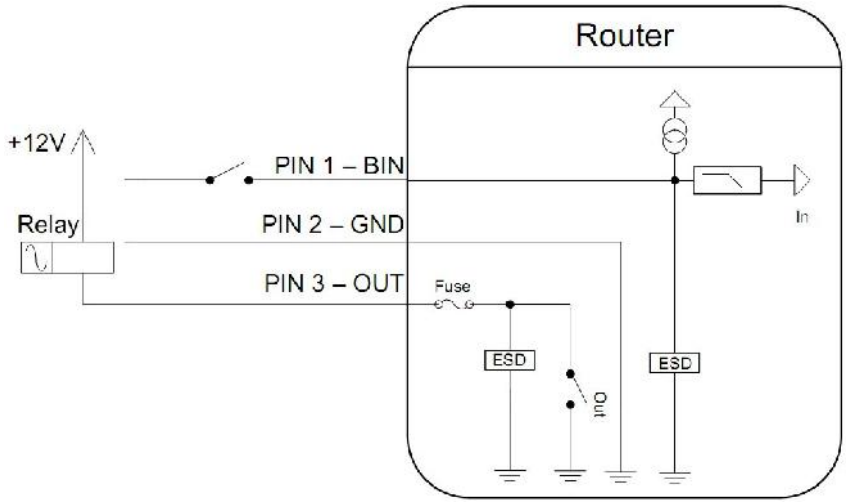


Fig. 34: Connection input and output of router

5.7.10.

5.7.11. Reset

It is important to distinguish between reset and reboot the router.

Action	Router behavior	Invoking events
Reboot	Turn off and then turn on router	Disconnect and connect the power.
		Press the **reboot** button in the web configuration.
Reset	Restore default configuration and to reboot the router.	Press RST button.

Table 12: Description of reset and restart router

After green LED starts to blink it is possible to restore initial settings of the router by pressing button RST on front panel. After press button RST it is restoration of factory configuration and reboot (green LED will be on).

For pressing the RST button could be used a narrow screwdriver.

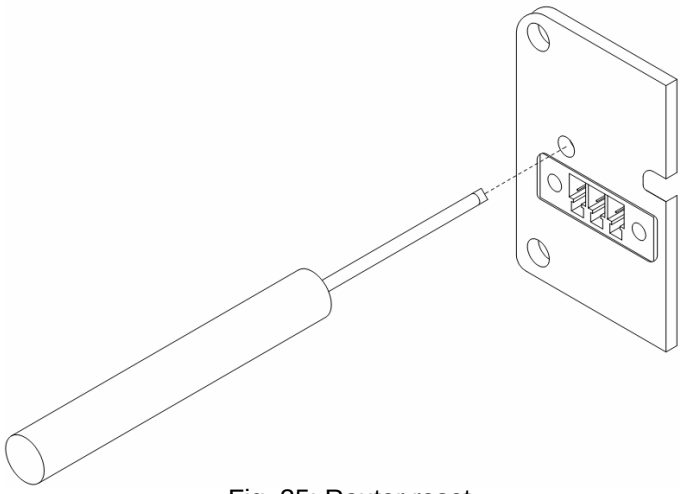


Fig. 35: Router reset

We recommend to backup your router configuration (See configuration guide), because reset router set configuration to the initial state.

6. First use

6.1. *Connecting the router before first use*

Before you give up the router, it is necessary to connect all components needed for the operation of your applications and the SIM card must be inserted. (See bellow picture)

The router can not operate without connected antenna, SIM card and power supply.

In operation, the router must be connected to the antenna, otherwise damage to the router.

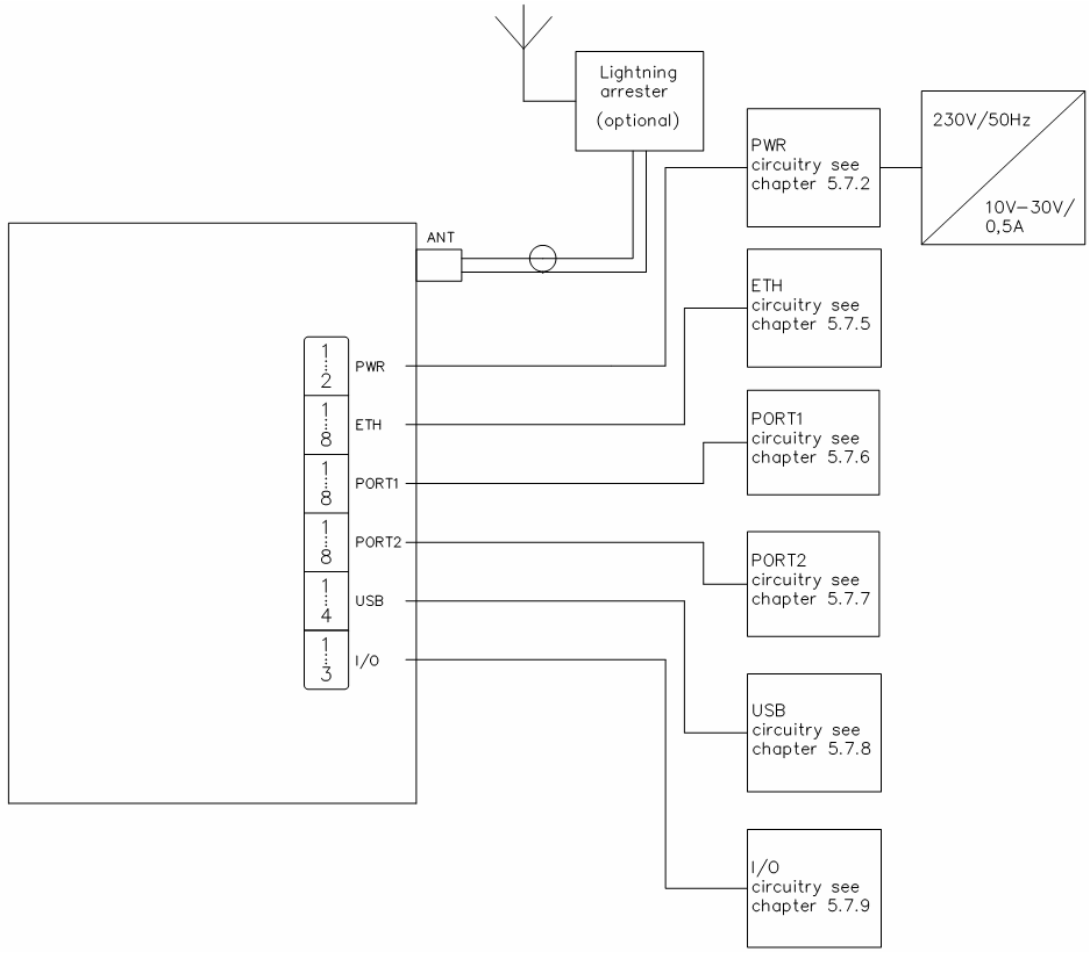


Fig. 36: Router connection

6.2. *Start router*

The router is set up connecting the power supply to the router. In the default setting the router starts to login automatically to the preset APN. Device on the Ethernet port DHCP server will assign addresses. The behavior of the router can be modified by means of the web or Telnet interface, which is described in the configuration manual.

The power consumption during receiving is 1W. The peak power consumption during data sending is 5,5W. For correct operation it is necessary that the power source is able to supply a peak current of 600mA.

6.3. *Router configuration*

Attention! If the SIM card is not inserted in the router, then it is impossible to operate. The inserted SIM card must have activated EDGE/GPRS.

6.3.1. Configuration over web browser

Monitoring of the status, configuration and administration of the router can be performed by means of the web interface, which is available after insertion of IP address of the router into the web browser. The default IP address of the router is 192.168.1.1. Configuration may be performed only by the user "root" with initial password "root".

A detailed description of the router settings via the Web interface can be found in the configuration guide.

6.3.2. Configuration over Telnet

Monitoring of status, configuration and administration of the router can be performed by means of the Telnet interface. After IP address entry to the Telnet interface it is possible to configure the router by the help of commands. The default IP address of the router is 192.168.1.1. Configuration may be performed only by the user "root" with initial password "root".

A detailed description of the router settings via the Telnet interface can be found in the configuration guide.

7. Technical parameters

7.1. *Technical parameters of router*

ER75i v2		
Complies with standards		EN 301 511, V9.0.2 EN ETSI 301 489-1 V1.9.1 EN 60950-1:06 ed.2 + A11:09 + A1:10
Temperature range	Operation Storage	-30 °C to +60 °C -40 °C to +85 °C
Protection rating	Freely In switch board	IP20 IP56
Supply voltage		+10 až +30 V DC
Consumption	Reception Transmission	1 W 5,5 W
Dimensions		42x76x113 mm (DIN 35mm)
Weight		ER75i v2 – 150 g ER75i v2 SL – 280 g
Antenna connector		SMA – 50 Ohm
User interface	ETH USB PORT1 PORT2	Ethernet (10/100 Mbit/s) USB 2.0 type A host Optional RS232/RS485/ETHERNET/M-BUS or inputs/outputs (I/O) Optional RS232/RS485/M-BUS

Table 13: Technical parameters of router

7.2. *Technical parameters of module*

EDGE module	
Frequency bands	EGSM850, EGSM900, GSM1800 and GSM1900
Transmit power	Class 4 (2 W) for EGSM850 Class 4 (2 W) for EGSM900 Class 1 (1 W) for GSM1800 Class 1 (1 W) for GSM1900

Table 14: Technical parameters of module

7.3. *Technical parameters of processor*

32b ARM microprocessor	
Memory	512Mb DDR SDRAM 128Mb FLASH 1Mb MRAM
Interface	Serial interface RS232 Ethernet interface 10/100Mbit/s USB 2.0 interface

Table 15: Technical parameters of processor

7.4. *Technical parameters of I/O port*

Port IO		
Input/Output	Binary input	reed contact with trigger level 1,3 up to 1,4 V
	Binary output	120 mA/max. 30 V

Table 16: Technical parameters of I/O

7.5. *Technical parameters of expansion port*

Technical parameters of the expansion ports are to be found in separate manuals for expansion ports.

8. Recommended literature

[1] Conel: **Start guide,**

[2] Conel: **Configuration manual,**

[3] Conel: **User's manual - Expansion port RS232,**

[4] Conel: **User's manual - Expansion port RS485/RS422,**

[5] Conel: **User's manual - Expansion port M-BUS,**

[6] Conel: **User's manual - Expansion port CNT,**

[7] Conel: **User's manual - Expansion port ETH,**

[8] Conel: **Application guide – Expansion port mounting,**

[9] Conel: **Application guide – Programmer guide.**

9. Possible problems

Some network cards are able to be set in situation, when it is not possible to connect the router. It is possible to solve this problem in the following steps:

- hand by selection communication rates 10 MB/s in property network cards,
- connect router over switch,
- start computer only after finalizing the start of the router.

10. FAQ

- I can't get from internet on equipment, which is connected to router and I have NAT enabled.
  - *The device's gateway has to be configured as the router.*
- Router resets itself, connection on Ethernet fails.
  - *It is necessary to use an antenna, which will be situated far from power supply.*
- I don't get on web server at NAT.
  - *The remote http access of the router has to be disabled, default server address has to be your web server and the gateway of the web server has to be the IP of router.*
- PPP connection fails.
  - *Check signal power. If signal power is weak, you will have to use a better antenna. If the environmental cells have a similar signal it will be necessary to use a directive antenna. Signal levels have to be in the range -50dBm and -90dBm.*
  - *It is necessary to set ping, which will check the connection and, in the case of fail ping, restart connection.*
- PPP connection won't be established.
  - *Recheck GPRS settings - APN, name, password and IP address.*
  - *Try to enter PIN – verification if the SIM card hasn't set PIN code.*
  - *In private APN it is appropriate to switch the DNS server send off.*
  - *Switch log system on and observe where the error turns up.*
- Connection fails on Ethernet or connection isn't establishing.
  - *On ethernet interface of the router it is possible to switch auto negotiation off and set a rate and duplex by hand.*
- DynDNS not function.
  - *In private APN not functional.*
  - *If the same IP address is recorded in your canonic name as dynamically assign address, it means that the operator is using NAT or firewall.*
  - *NAT is possible to verify by the help of the ping on address of your server with static IP address and by the help of the router address verify and address in ping.*
  - *Firewall is possible to verify, for example by remote access on web interface.*
  - *The operator doesn't give out address DNS servers and without DNS server's it is impossible to connect to server dyndns.org. In log system will be this message:*
    - DynDNS daemon started,
    - Error resolving hostname: no such file or directory,
    - Connect to DynDNS server failed.
- IPSec tunnel is establishing but communication doesn't function.
  - *Probably it is badly set up route conditionals of connected equipment or it is bad set up GW.*
- FTP doesn't function.
  - *Router doesn't support the active FTP mode, supports the passive mode only.*
- RS232 doesn't function.
  - *It is necessary to verify present the expansion port RS232.*
  - *Verify present the expansion port RS232 in router configuration in menu „external port", or verify connection locally by the help Telnet-Hyper terminal.*

- L2TP or IPSec isn't establishing.
  - *Verify the reason in the log system.*
- I switched the router to offline mode by the SMS message, but the router is in online mode after restart.
  - *Control SMS message doesn't change the router configuration. If the router is switched to offline mode by the SMS message the router will be in this mode up to next restart. This behaviour is the same for next all control SMS messages.*

11. Customers support

Up to date information about the product is on website:

http://www.vitriko.com/

Upkeep-advices:
The SIM-card must be handled carefully as with a credit card. Do not bend, do not scratch on this and do not expose to static electricity.

During cleaning of the router do not use aggressive chemicals, solvents and abrasive cleaners!

Conel Company hereby declares that the router narrated in this user's guide fits all basic demands of directive 1999/5/EC (R&TTE).

Router fits values of coefficient SAR defined by association ICNIRP and values of "About protection of health before non-ionized radiation".

CE Declaration about consistency was issued and is possible get it in accompanying CD or at producer. Contact www.vitriko.com